[0064] The ability to interactively estimate both debt and equity valuation outcomes in a game-like dashboard mounted on the Web is without precedent in the U.S. and global capital markets. The solution deploys an interactive database containing a unique benchmarking system for equity and debt analysis. This benchmarking system entails debt cost estimation based on the use of subjective credit scoring methods by industry experts with respect to intangibles such as management quality and combines these with customary credit ratios to create a benchmark score. These benchmark scores are then correlated with existing bond yield data in the public market for the coal companies shown using a log-linear regression analysis. This method shown below establishes a clear functional relationship between credit quality and the market measure of credit quality, debt cost.

[0065] FIG. 8 shows exemplary key data inputs for the dashboard shown in FIG. 7 exemplifying the Coal Company Debt and Equity Valuation Model. The key input, Benchmark Score 80, is taken from a separate feeder program (discussed below) that estimates the overall viability of the companies reviewed. The Benchmark Score is based on expert estimates of business fundamentals, such as management quality and other business attributes in addition to a quantitative scoring of standard quantitative financial ratios, such as cash flow/debt and cash flow/interest. An expert's subjective scoring of business fundamentals is performed on the web enabled interactive analytical system called Investment Benchmarking and takes the format described below. The yield on the five year note 82 and EBITDA data 84 is gathered from known sources.

[0066] The Benchmark Score analysis is now discussed. Initially, categories are defined and weighted for the evaluation of business fundamentals, such as the overall quality of company strategy, management and other elements as shown in FIG. 9. Subjective judgments of industry experts, such as retired CEOs, determine the weights. Then subcategories are defined in each main category such as, for a mining company's strategy, variables such as reserve size, the ability to generate new acquisition deals ("deal generation"), flexible transportation alternatives ("transport flexible") such as rail, barge or truck, etc., as shown in FIG. 10. The experts help determine the subcategories. Then with expert assistance, each of the strategic variables, such as reserve size across a peer group are evaluated, as shown in FIG. 11. Then, each peer company's score is summed in relation to the ideal and in relation to one another to create a benchmark score on strategic variables as shown in FIG. 12 for coal companies in Southern West Virginia.

[0067] As shown in Table 4, a quantitative analysis is performed on these same peers on these variables with their respective weightings, which are based upon well known credit research bankruptcy prediction to create a financial benchmarking.

TABLE 4

Element	Weight
Leverage	30%
Equity cushion	42%
Profitability	100%
Liquidity	36%
Size	30%

[0068] Each company is then evaluated on each financial variable relative to the ideal, as seen in FIG. 13. Next, each company's weighted financial score is summed to create an overall financial benchmark score as seen in FIG. 14. Finally, financial and strategic benchmark scores are combined to derive the Total Benchmark Score as shown in FIG. 15.

[0069] The foregoing is an example for privately held coal companies in West Virginia. The following model relates to U.S. coal companies with publicly traded debt and equities.

[0070] Once the Benchmark Scores are known, as shown in FIG. 8, combining both business and financial variables, this Benchmark Score can be used to calculate bond yields and EBITDA multiples in the digital dashboard shown in FIG. 7.

[0071] Initially, the second key variable 82 is input. The second key variable is the estimated public market bond yield which can be take from published sources including the Wall Street Journal and online sources. For example, at the time when the example in FIG. 8 was generated, Peabody's 5 year note yield was 5.96%. The EBITDA multiple 84 shown in FIG. 8 may also be taken from published sources such as Yahoo Finance or may be calculated as: (today's stock price× shares outstanding+all debt−cash)/latest twelve months' earnings before interest, taxes, depreciation and amortization.

[0072] FIG. 16 shows how standard log linear regression analysis can be used to determine bond yields based on statistically modeling the expected bond yields associated with a given Benchmark Score. Although not shown in detail estimated EBITDA scores will also be explained.

[0073] To calculate the value, six sources will be used, i.e., "n"=6, in the example shown in FIGS. 8 and 16. The Company's Benchmark Score is converted to its common logarithm: e.g., for Peabody's Benchmark Score of 76, its logarithm is 1.88 as shown in the Log X row of FIG. 16. Next, the Company's bond yield 82 is converted to its common logarithm; e.g., for Peabody its 5.96% bond yield appears in logarithm form as −1.22 in the Log Y row of FIG. 16. Also calculated are LogX squared, LogX×LogY, and the (Sum of LogX)^2, as shown in their respective rows of FIG. 16.

[0074] An ordinary regression analysis is performed on the Y variables (company bond yields converted to logarithms) and on the X variables (company Benchmark Scores converted to logarithms). To derive the equation for estimating bond yields, the equation (2) is used.

$$\text{Log } Y = a + b \times \text{Log } X, \tag{2}$$

[0075] where a=Sum of LogY/n-b(Sum of LogX)/n b=(n (Sum(LogX×LogY)−(Sum Log X)×(Sum Log Y))/(n (Sum Log X^2)−(Sum×LogX)^2

[0076] In this example, a=1.077605668; and b=−1. 241763428. Thus, LogY=1.08-1.24 LogX in this example.

[0077] Once the predictive equations are known for Company debt yields as a function of the Company Benchmark Score, then a predictive equation is similarly calculated for Company EBITDA multiples by substituting EBITDA multiples 84 for debt yields 82 in the equation (2) to generate a Company EBITDA multiple estimator. Then, the estimates of Company debt yield and EBITDA multiple are combined and shown on the output in FIG. 17, which then becomes the basis of the interactive dashboard for Coal Company Debt and Equity Valuation of FIG. 7. It is noted that the actual bond and equity values are shown in FIG. 17, labeled "actual yield" and "actual ebitda multiple" and are determined from actual market data. It is also noted that a private debt premium of 20%